	Application No.	Applicant(s)
Notice of Allowability	10/040,857	WHIKEHART ET AL.
	Examiner	Art Unit	
	Charles Chow	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *2/17/2006*.

2. ☒ The allowed claim(s) is/are *1-5 and 9-32*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the

           International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of

        Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☐ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

Detailed Action

1. This office action is for amendment received 2/17/2006.

2. The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2618.

Allowable Subject Matter

3. The following is an examiner's statement of reasons for allowance:

Claims 1-5, 9-32 are allowable over the prior art of record. The prior arts fail to teach the allowable features, singly, particularly, or in combination.

The cited reference, **Aakaiwa, as shown in Fig. 3, does not have the structure of the first and second signals input to the first mixer for resetting, of the vehicle radio receiver** [applicant's Fig. 2], **in claims 1, 9; and**

the vehicle radio receiver for generating a test signal in response to a first test steering solution or the first radio signal, in claims 17, 24, for the features:

that the **resetting of a proportion** (matching the different portion) **of the first and second signals** for the receiver **in response to the different proportion of the first and second signals of the test signal** when the test signal quality exceeds the receiver signal quality, for the beam steering control of the spaced antennas of a vehicle radio receiver, which has a first mixer and a second mixer, for dynamically adjusting the proportion of the receiving signals to reform new test signal for better reception signal quality, in order to overcome the multi-path distortion associated with vehicle moving, as shown in each independent claims 1, 9, 17, 24.

The dependent claims are also allowable due to their dependency upon the independent claim and comprising additional claimed features associated to the features of the independent claims.

The closest prior art **Akaiwa et al. (US 5,710,995)** teaches the generating of better received signal Y(t) based on the w1 * exp(jΦ1) x1(t) + w2 * exp(jΦ2) x2(t), based on the multiplying of weight factors w1, w2, which is determined by the distortion, quality, of the CMA algorithm [Fig. 3, col. 2, line 50 to col. 3, line 43], the quality monitor 17, selection 19, to select signal from processor 13, 14 [col. 2, lines 33-41], but fails to teach **the structure of the first and second signals input to the first mixer for resetting, of the vehicle radio receiver** [applicant's Fig. 2], **and the vehicle radio receiver for generating a test signal in response to a first test steering solution or the first radio signal,** for the resetting the proportion of the first and second signals.

Strenglein (US 3,864,633) teaches a radio receiver [Fig. 6], having the hybrid circuit 61, 60; the evaluation of the best SNR characteristics [col. 5, lines 56-65], the better SNR on 68 to control phase setting in 57 [col. 5, lines 44-65], but fails to teach the first mixer circuit is operable to reset a proportion of the first and second signals for the receiver signal in response to the different proportion of the first and second signals of the test signal.

Other prior arts in below were also considered, but they fail to teach the above allowable features,

Baltus et al. (US 5,887,247) teaches the mobile car radio[abstract, Fig. 2, col. 1, lines 8-16], for selecting better received signal by adjusting the phase shift at 25, 26, for combing at 23, 25 [col. 2, lines 10-42].

Kuo et al. (US 6,064,865) teaches the decoding of RDs signals at RDS decoder 34, from the signal output of summer 32 [col. 3, lines 40-43, Fig. 5], the steering antenna weight

for combining signals from antennas 24, 25, tuners 27-28 [Fig. 5, abstract; col. 1, lines 6-11; col. 4, lines 56 to col. 5, line 18].

Wildhagen (US 2002/0168,955 A1) teaches the antenna diversity using audio signal weighting control 3 [Fig. 1, paragraph 0022-0024, abstract].

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles C. Chow whose telephone number is (571) 272-7889. The examiner can normally be reached on 8:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Charles Chow C.C.

April 3, 2006.

EDWARD F. URBAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600